

## **WHAT IS CLAIMED IS:**

1. A method of allocating an Internet Protocol (IP) address and detecting duplication of the IP address in a network environment, comprising the steps of:

allocating an initial IP address to a terminal;

sending and receiving broadcast messages;

detecting duplication of the IP address while sending and receiving the broadcast messages;

updating a Duplicate Address Detection (DAD) table through searches of at least one of a DAD table and a history table; and

determining whether a collision of the IP address occurs using a DAD timer handler.

2. The method according to claim 1, wherein the network environment is an ad-hoc network environment.

3. The method according to claim 1, wherein said terminal allocates said initial IP address to itself.

4. The method according to claim 1, wherein said broadcast messages are one-hop broadcast messages.

5. A method of allocating an Internet Protocol (IP) address and detecting duplication of the IP address in a network environment, comprising the steps:

- (a) initially allocating a tentative IP address to a terminal;
- (b) determining whether the tentative IP address can be used by the terminal;
- (c) comparing the tentative IP address with at least one other IP address;
- (d) if the tentative IP address has a duplicate, selecting an advisory IP address that does not exist;
- (e) sending the advisory IP address to the terminal;
- (f) performing step (b) using the advisory IP address as the tentative IP address.

6. The method according to claim 5, wherein said terminal allocates the tentative IP address to itself.

7. The method according to claim 5, wherein the network environment is an ad-hoc environment.

8. The method according to claim 5, wherein the network environment has no central server.

9. The method according to claim 5, wherein said at least one other IP address is located in a duplicate address detection (DAD) table.

10. The method according to claim 9, wherein the advisory IP address does not exist in said DAD table.

11. The method according to claim 5, wherein a neighboring terminal selects the advisory IP address.